TorqueFlite Rebuild

Here's step-by-step teardown and reassembly information on Chrysler's durable transmission.

BY KALTON C. LAHUE

Since its introduction in 1956, the TorqueFlite has earned an enviable reputation for rugged, dependable operation. While improvements have been made over the years, today's TorqueFlite is essentially a highly refined version of the same basic design as the original A-466. Part failure is a rare occurrence on a stock TorqueFlite, and if the owner gives it even a minimum of care and maintenance, the transmission will run on and on with hardly a complaint.

In fact, so hardy are these units that many drivers simply take their transmission for granted. That's how repairmen see most TorqueFlites—through owner neglect. But if you have the unit serviced every 16,000 miles, a major breakdown and overhaul can easily be avoided. The trans will keep going long after the rest of the car has suffered a nervous collapse. The transmission photographed for the following teardown/reassembly sequence was a victim of owner neglect. Driven too long with too little fluid, the clutches were dry and burned, but then, you should see the rest of this '67 Charger.

TorqueFlites come in two versions these days, the heavy-duty A-727 and light-duty A-904. As operational requirements differ for each engine/car combination, some internal parts are different, so be sure to check the part number stamped on the left side of the transmission oil pan flange when ordering parts. Bill Schindler of Golden State Chrysler-Plymouth in Burbank did the teardown/reassembly for the camera, so let's get right inside that A-727 and see what makes it tick.

How To: Torqueflite Rebuild

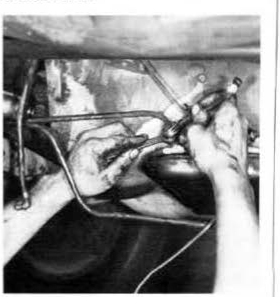
1. First put car on hoist. Place container under trans oil pan, loosen bolts, tap pan to break it loose, remove pan and let fluid drain.

2. While waiting, disconnect universal and remove driveshaft. Also check U-joint for possible wear; it might have to be replaced.

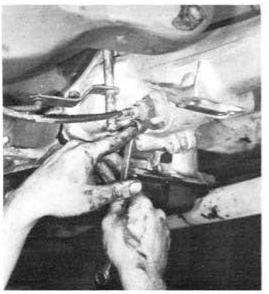
3. After trans fluid drains, replace pan; hold in place with bolt on each side, preventing valve body burr. Remove cover plate, drain.

4. As converter drains, unhook linkage, cables, etc. Linkage torque plate is held by two bolts. Safeguard removed parts against loss, hurt.

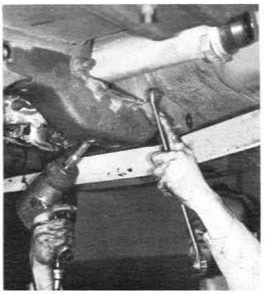
5. Starter motor must be removed from trans case—a slow job. Disconnect battery ground cable first, then unhook neutral starting switch.



6. Use two wrenches to disconnect oil cooler lines at trans. Plug lines to keep oil from creating dripping mess. Now remove oil filler tube.



7. Loosen, remove bolt and retainer securing speedo pinion adapter from extension housing. If trans fluid in cable housing, replace adapter seal.



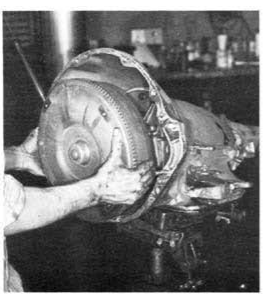
8. Remove three of four crossmember attaching bolts and loosen 4th. Power tools great. Be patient with hand wrenches or you'll bruise knuckles.

9. You'll need a 4-in. extension socket to reach the two rear mount-to-extension housing bolts. Power tools will simplify matters.

10. Now remove 4th crossmember bolt. This can be dangerous; it may drop. Best bet is to hold it in place, push out bolt and housing together.

11. You'll need a 2-ft. extension to reach upper bellhousing retaining bolts. A flashlight is recommended. Remove all but one bolt.

12. Position trans jack to support weight and remove last retaining bolt. Work trans rearward off engine block dowels, pull hub from crank end.



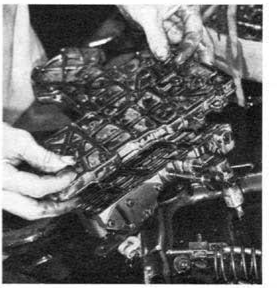
13. Remove converter assembly by pulling toward you—firmly. Place converter face on clean surface. Protect it from dirt with clean cloth.

14. To disconnect throttle lever shaft from manual lever assembly, snap off E-clip; remove washer. Slide off by pushing throttle valve down.

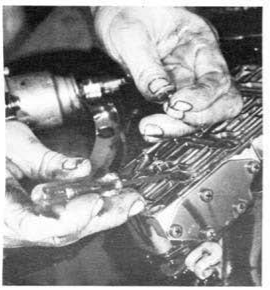
15. Lift entire valve body from trans housing, move to clean area for disassembly. Note dirty fluid filter, preventable by maintenance.

16. Remove three screws to free spring retainer, torque converter control valve spring, regulator valve spring with line pressure adjust screw.

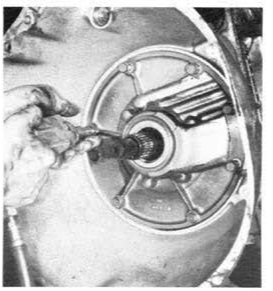
17. Remove kickdown valve and detent, throttle valve and torque converter control valve. Watch order of parts removal—it's important.



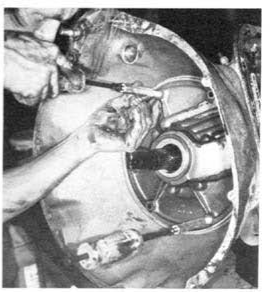
18. Rotate manual valve out of valve body. Transfer and separator plates are held to body by 17 screws; loosen, lift transfer plate, remaining screws.



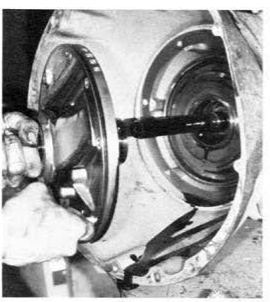
19. One of six steel balls in valve body is considerably larger than other five, and is located in the larger chamber. Take note.



20. Tighten front band on front clutch retainer to prevent it coming out with oil pump and damaging clutches. Remove oil pump retaining bolts.



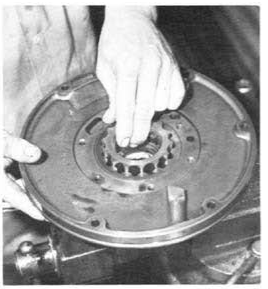
21. Thread two knocker weights in pump housing flange to remove oil pump, reaction shaft support assembly. Thread opposite sides for even pull.



22. Bump outward on the knocker weights to withdraw assembly from trans case. It'll take more effort to free a previously untouched assembly.

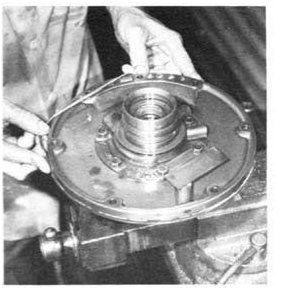
23. Remove bolts from rear of reaction shaft support, then vent baffle. Separate support from pump body. Remove old oil seal with mallet, punch.

24. Inspect pump body and shaft support for wear, blow dry and reinstall new seal as shown. Careful—lap in gently or seal may leak.

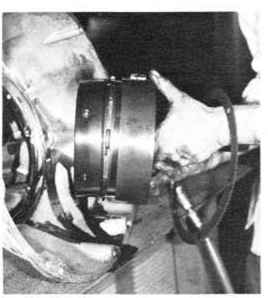


25. Turn oil pump body over and insert outer and inner rotors. A light coating of lubricant before fitting the outer rotor won't hurt.

26. Now install reaction shaft support assembly, position vent baffle over vent opening. Thread bolts and torque to 150 in.-lbs. exactly.



27. The interlocking seal rings on reaction shaft support must turn freely in grooves. Don't remove unless worn or broken. Replace O-ring.



28. Now loosen front band adjuster, remove band strut and slide kickdown band, front clutch assembly out. May be trouble source if trans dry.

29. Remove large selective snap ring holding pressure plate in clutch piston retainer, lift both plates from retainer. Repeat up front; check.

30. Fingernail-test driving disc surface for flaking. Use compression tool for front clutch dissassembly. Compress springs, remove snap ring.

31. After removing compression tool, lift out retainer, return spring. You'll see 8, 10 or 12 springs; 8 and 12 versions have 10 and 15 shafts.

32. Clean all parts and inspect them for wear before reassembly. First install a new seal ring as shown. Use solvent for cleaning all parts.

33. Fit all seals carefully to avoid leaks. Now install inner, outer seal on front clutch piston. Place piston firmly, see that it moves freely.

34. Replace springs on piston shafts. If 8 springs, place 4 on each side. With 12 springs, make three equal groups separated by empty shaft.

35. Insert spring retainer and snap ring, using compression tool to compress and seat. Snap ring pliers will help. Space here is limited.

36. Lubricate clutch plates, install one steel plate and then one lined disc until all are in place. Don't use snap ring for rear clutch.

37. After careful seating process, pry one end of wave spring from groove in rear clutch retainer, remove two springs, spacer, piston, seals.

38. Once components have all been cleaned and inspected, begin reassembly of rear clutch. Use a liberal application of lubricant.

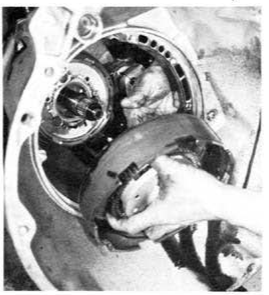
39. Fit piston into piston retainer. Small screwdriver, twisting motion on piston will give big assist. Rotate while pushing down until snaps in.

40. Place clutch piston spring, spacer ring on top of piston in retainer. Both must be positioned in retainer groove, pushed progressively.

41. Replace inner pressure plate in retainer with raised portion resting on spring; install clutch plates, number depending on engine type.

42. Drop outer pressure plate in place, follow with selective snap ring. Work on each unit separately so front/rear snap rings won't mix.

43. Position thrust washer, then replace two seal rings on input shaft prior to clutch mating. Set unit aside until ready to assemble.



44. Remove small thrust washer and snap ring from output shaft end, slide off front planetary gear assembly and driving shell. Inspect.

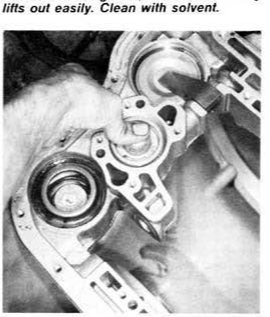
45. Shaft and gear units should be OK unless trans very sick. Now remove rear planetary gear assembly, rear annulus gear, low/reverse drum.

46. Inspect all removed parts while cleaning. Remove two screws, plate and gasket from housing mounting pad extension; spread snap ring.

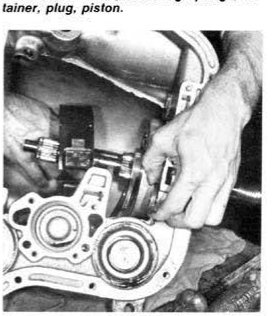
47. Remove low/reverse band by loosening adjustment screw to drop strut into hand. Long link, anchor assembly lifts out easily. Clean with solvent.

48. Inspect band, bond linings for wear, replace if grooves smooth. Then remove low/reverse servo, including springs, retainer, plug, piston.

49. Accumulator piston must be removed; output shaft pulled, cleaned. Clean and dry trans case; begin reassembly, starting with seals. Lube.



50. Replace accumulator piston and spring after fitting new seal rings. Snap ring holds piston in place, should engage inner groove.

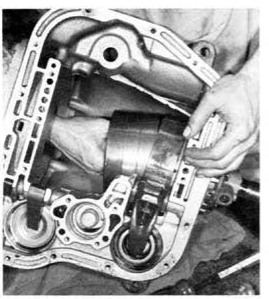


51. Output shaft is reinstalled and low reverse band inserted—just handed onto shaft. Must fit linkage into place before securing band.

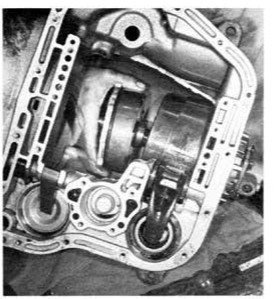
52. Joining low/reverse linkage with grease helps in getting parts in proper place. Place O-ring on band reaction pin before inserting.

53. To secure the band in position, mate linkage so that it fits around band ends, using one hand to slide in the band reaction pin.

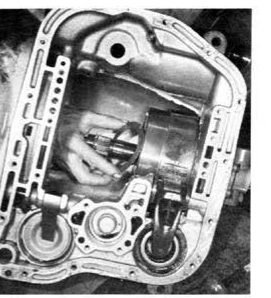
54. Fit rear planetary gear and rear annulus gear assembly around thrust plate. Washer goes atop assembly, is held in place with snap ring.



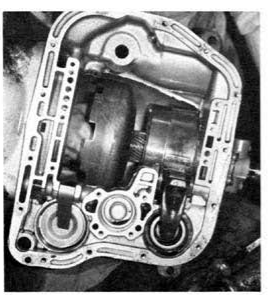
55. Fit low/reverse drum onto output shaft with rotating motion. You may have to loosen band adjustment for proper fit inside the drum.



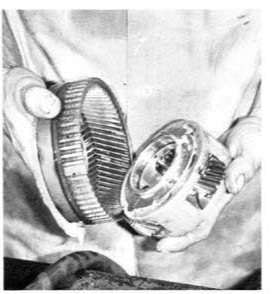
56. Rear planetary/annulus gear assembly is fitted over output shaft and inside low/reverse drum. Use a rotating motion to engage teeth.



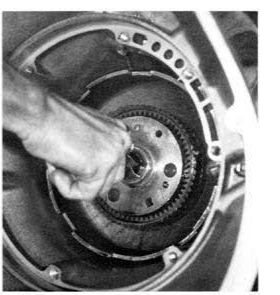
57. Fit another thrust washer at front of rear planetary gear assembly. Use light coating of lubricant—important for correct placement.



58. Slide driving shell and sun gear assembly onto shaft, rotating to match teeth. Insert thrust washer inside front of driving shell.

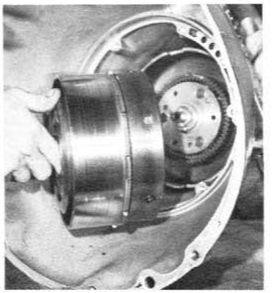


59. Thrust washer goes inside driving shell on rear hub of planetary gear set—with lube. Slide assembly into front annulus gear. Rotate to mate.



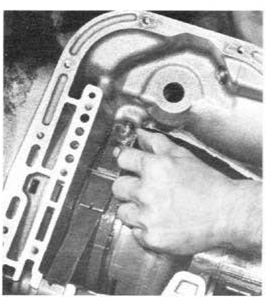
60. Work front planetary, annulus gear assemblies onto output shaft, meshing planetary and sun gear teeth. Gears may hesitate, but will mesh.

61. Now install selective snap ring on front end of output shaft. Measure end play here; replace snap ring if not within specs for thickness.

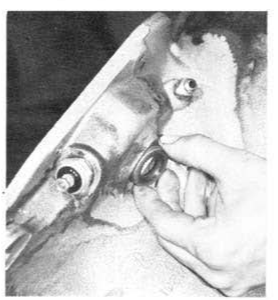


62. Thrust washer must be inserted on output shaft; position front and rear clutch assemblies on splines. Front lugs must fully engage.

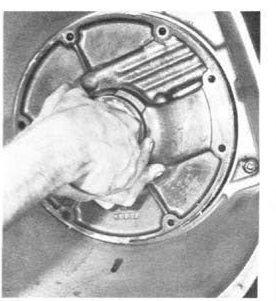
63. Slide kickdown band over front clutch assembly, rotate ends for placement of strut and anchor. Band will rest on front assembly.



64. Set band strut in place; position anchor on opposite side, tighten adjuster. This locks front band until ready to adjust to specs.



65. Pry out old seal from valve body manual lever shaft and replace. Use 15/16-in. socket and hammer to install seal, tapping gently, evenly.

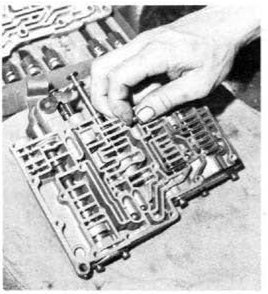


66. Next fit oil pump and reaction shaft assembly in place. Tap lightly with mallet, line up stud holes; replace studs. Torque to 150 in.-lbs.

67. Fit new extension housing gasket on case, replace housing, spread output shaft bearing retaining snap ring; tap housing, ring into groove.

68. Torque housing bolts to 24 ft.-lbs., replace gasket. Adjust bands, back off low/reverse screw nut five turns; torque screw to 72 in.-lbs.

69. On above, torque lock nut to 35 ft.-lbs.—exactly. Kickdown band adjust screw is backed off five turns, torqued to 72 in.-lbs.



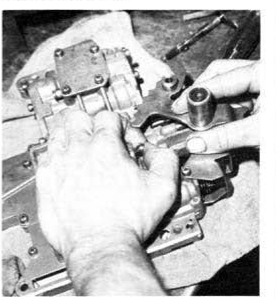
70. Torque lock nut to 29 ft.-lbs., completing factory specs. Now reassemble valve body (with cleaned passages). Reinsert six steel balls.

71. Position steel separator plate over valve body; set transfer plate in place, lining up screw holes. Pieces should mate with no difficulty.

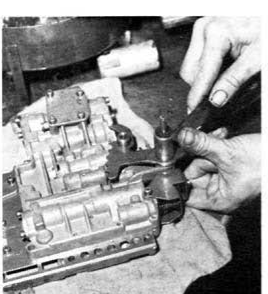
72. Install 17 retaining screws, starting at center, working outward. Tighten to 35 in.-lbs., working same way. This assembles valve body.

73. Now replace torque converter control valve, spring, throttle, regulator, kickdown valves; fasten behind spring retainer. Replace screws.

74. Replace shuttle valve cover plate; position stiffener plate on separator plate; torque to 28 in.-lbs. Use of torque wrench is critical.

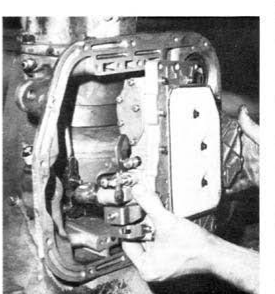


75. Install detent ball, spring, control levers, after replacing old throttle lever shaft seal. Insert detent ball, spring; engage valve and ball.



76. Fit retaining washer in place on throttle lever shaft, lock everything with E-clip. Work manual lever assembly, make sure operation is smooth.

77. New trans fluid filter completes reassembly of valve body. Torque retaining screws to 35 in.-lbs. Note new/old filter difference.



78. Valve body is now ready to insert into trans case. Parking lock rod must connect to manual lever, E-clip slipped in. Bolt on pan—and done.